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ARTL@S and BasArt: A Loose Coupling Strategy for Digital Humanities

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Abstract

The core ARTL@S digital humanities strategy is that of loosely coupling resources, platforms, and use scenarios. A number of sites will feed from the same geodatabase (BasArt), which will be enriched by users with new content. Inspired by the Web 2.0 design principles, ARTL@S relies on the BasArt API, which will enable an ecosystem of sites to use primary data to generate their own maps, charts, and tables. A variety of economic models will also be used to support the site, from free to pay-based. User-generated content will be monitored by data management and curation techniques that will ensure the rigor of the scientific approach.

Résumé

Au cœur de la stratégie des humanités numériques d'ARTL@S se trouvent des ressources de couplage flexible, des plateformes et des scénarios d'utilisation. Un certain nombre de sites se nourriront de la même base de données géolocalisées (BasArt), qui sera elle-même enrichie par les utilisateurs. Inspiré par les principes du design du Web 2.0, ARTL@S repose sur l'interface de programmation BasArt, qui permettra à un écosystème de sites d'utiliser les données d'origine et de générer leurs propres cartes, graphiques et tableaux. Des modèles économiques seront mis en œuvre pour soutenir le développement du site, les bases de données pouvant être gratuites ou payantes. Le contenu généré par les utilisateurs sera surveillé par des techniques de gestion des données et de curation de contenu, qui lui garantiront une rigueur scientifique.

The free and open circulation of ideas lies at the core of humanistic scholarship. The emergence of digital and online tools for supporting humanities scholarship, including art history, can considerably speed up this ideal [D. Bodenhamer, J. Corrigan, T. Harris, 2010]. Yet, as the publishing, mapping, and data management platforms meant to support this type of scholarship proliferate, many technical and methodological incompatibilities may also appear, endangering the ideal of open communication and potentially of comparing scientific facts across knowledge domains. Ultimately, scholars need practical methods to connect this plethora of tools, so that information can efficiently flow across platforms to generate new scholarship [E. C. Kansa and S. W. Kansa, 2011]. Removing potential walls between narratives, primary data, and visualization techniques that rely on maps and charts holds particular importance for the spatial humanities. Narratives should naturally follow the contours of landscapes. Maps should be more than add-ons for stories, they should be an integral part of those stories. At the same time, as the publishing world shifts from static, paper-based, to online digital platforms, established practices for evaluating and disseminating humanities endeavors should be continued, even as new publication methods are encouraged [S. A. Matei *et al.*, 2007]. The ideal of scientific rigor should be upheld and the virtues of peer-review and continuous feedback preserved.

A possible solution for these challenges is to use a "loose coupling" strategy for supporting projects that aim to move past narratives, tables or maps printed on paper [S. A. Matei, E. C. Kansa, and N. Rauh, 2011]. Such strategy embraces the idea of unlocking data hidden in spreadsheets that were never seen by anyone else other than the researcher. It also believes in the value of placing all social facts in a geographic context and and presenting them through interactive maps. Such maps should be more than mere displays of point or contour based information, they should display social scientific facts, utilizing a variety of techniques, from heat maps, displaying probability distributions, to "hot spot" analysis. The strategy of loose coupling also believes that stories (narratives) should be published online, while quantitative data used to support it should be equally accessible online. At the same time, such data should not be "hard coded." It should not tethered to the text. It should be stored separately, in specialized databases that are easy to maintain, enrich, and curate. Furthermore, the databases should provide means to generate tables, maps, and charts in the easiest manner possible and should allow third party sites to embed these visualization or data products with great ease.

The "loosely coupled" vision is not a simple ideal, it is a working, practical strategy that animates the collaborative efforts of the ARTL@S team. The ARTL@S project, as described by Beatrice Joyeux-Prunel in this volume [p.9-25], is an ambitious multidisciplinary, international attempt to create a data repository of spatial and quantitative information about some basic "who," "what," "where," "when," questions related to artistic production. Rooted in the vision of the Annales school of history, the project believes that revealing the material and social aspects of the artistic act is an important precondition for understanding the significance and message of artistic artifacts. Capturing the material and social dimensions of the artistic phenomenon requires a preliminary process of discerning, measuring, recording, and ordering patterns. These include patterns of spatial production and consumption or patterns of individual and group life journeys, including places of upbringing, habitation, education, or exhibition. In this respect, the project is truly multidisciplinary, incorporating both humanities and social scientific approaches.

To capture and reveal the complexity of the data necessary for understanding the evolution of the art world across time and space, a core database (BasArt) is in the process of being designed and deployed. A data interrogation and visualization interface is also developed, which will empower scholars and the larger public to query the database and reuse its content as maps, charts, or even simple tables in a variety of ways. Access will be structured along a free-paid continuum, which will include free access for the contributors. Premium, fee based services will also be available.

A pilot of this model can be seen in action at the Triumph of American Art in Europe website (http://ubimark.info/usart), also described by Dossin in her chapter [see this volume, pages 33-39]. What will make BasArt a new type of digital humanities endeavor is that data is not just stored and visualized online, but that it is in fact a type of service. Taking a page from the Web 2.0 playbook, BasArt

will allow researchers to construct site and web applications that would be able to use BasArt in the same way layers in Google Maps are used to be embedded in other sites and applications. Data will be searchable, retrievable as raw information, repackaged as a new layer of information and displayed on third sites as if it were part of their original architecture. In other words, computer driven queries of BasArt data will be answered with streams of information that can be reused in a variety of ways to generate scatter plots, heat maps, charts, tables, and so on. The database will be more than an online searching engine. Technically speaking, it will offer an Application Programming Interface (API), which will allow other sites to present (mashup) the raw information via presentation and interpretation strategies originally unintended or not envisaged by us, the original creators of BasArt and ARTL@S.

In brief, our vision of loosely coupling data and resources aims to connect platforms and future users without forcing any of them to follow any particular model for data publishing or narrative editing. It is a "loosely coupled" vision, in that anyone who has the need for our data can use it and put a new "spin" on it. Simultaneously, BasArt users will be able to check, edit, and enhance the raw quantitative data that is served to them. For this, a carefully monitored system of data curation will be put in place. Contributions will be assigned to specific contributors. Feedback will be offered by the users and editors to the original contributors regarding the completeness and accuracy of their data. The specific mechanism is yet to be determined and suggestions for various techniques that can be used are welcome. This will provide an avenue for BasArt to grow with its use and at the same time to maintain the rigour of the scientific process.

An important point that should also be made is that the ARTL@S project is not limited to storing and serving information as a service. We will also provide a model web and mixed publishing solution. Following in the footsteps of the Visible Past site, a number of sites were or are in the process of being deployed, starting with http://artlas.ens.fr/map, which will demonstrate how BasArt data can be used to create new ways of telling visually and scholarly compelling stories. The sites will provide the means for teams of researchers to collaboratively work on articles, papers, or even books, to enhance them with maps and charts, and to distribute the product of their labors in a variety of formats: web pages, electronic, or print on demand books. Furthermore, print books and materials, which will be distributed on Amazon.com, just like the present volume, will be back linked to the web using 2d codes, similar to the one to the left. An example of a 2d code enhanced book, which I produced to illustrate this concept [S. A. Matei and B. C. Britt, 2009), can be found at http://matei.org/url/17s.

As researcher teams grow or as researchers not originally affiliated with ARTL@S or BasArt become interested in our project, new sites can be created, using content management systems similar to those used to create http://artlas.ens.fr/map and Visible Past (http://visiblepast.net/). Since we are using open source software, the solutions we offer will be easily reproducible. The new sites will be able to utilized the BasArt API to generate new data streams and visualizations solutions.

The larger strategic vision behind loose coupling is to deploy a modern digital humanities and web publishing vision, which assumes that narratives are open for continuous improvement by successive generations of authors, that data can be edited, enriched, and served as a service to all interested, and that maps are live, interactive, continuously growing digital entities. Furthermore, it assumes a decentralized approach to publishing. Starting with a central repository of data residing online, not only one, but a variety of projects should be able to loosely couple to each other, creating an ecosystem of platforms and distribution solutions. This is, of course, the very broad vision that inspires the project. In its more narrow implementation, the project will use its own specific methods for reviewing and curating content. However, the guiding principle throughout the entire process will be that of generating knowledge of the highest quality, which will be disseminated through the most efficient means available.

This vision is at the same time past the blueprint stage. It has been spearheaded by the Visible Past project [S. A. Matei, 2009], which I initiated at Purdue University a few years ago, and has produced an ecosystem of sites and publications, including besides http://artlas.ens.fr, Visible Past (http://visiblepast.net), Kidnect.us (http://kidnect.us), Ubimark.com (http://ubimark.com), or The Triumph of American Art in Europe (http://ubimark.info/usart). The sites connect a variety of data repositories, from those saved in generic, Google Spreadsheet and Google Fusion Table formats, to those served by specialized applications, such as Open Context (http://opencontext.org; see Kansa, Kansa and Shultz, 2007) or The Art History Mapping Service created at Purdue University by a multidisciplinary team of researchers and cartographers.

These projects come together to meet the challenge of "spatial humanities" [D. Bodenhamer, J Corrigan, and T. Harris, 2010], which strive to combine qualitative evidence and quantitative representations of space and social phenomena. It is worth repeating that within spatial humanities environments narratives and qualitative evidence are tightly meshed up with spatial and social scientific data. Our vision of loosely coupling platforms and solutions enhances collaboration by minimizing bottlenecks created by standards incompatibilities. Rather than building monolithic silos of data and text, a loosely coupled approach enable scholars to leverage an ecosystem of Web-based software and information services to meet different publishing and visualization needs. Since the needs of our project are not unique to art history, our project holds wider multidisciplinary relevance. Our experiments will inform the development of similar spatially-oriented projects by helping to identify key interface, semantic, and data quality requirements and good practices.

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